241

Not all of the upland or slope cultivation is done by terracing, as we have seen. Crops other than rice are often grown on hillsides, or up slopes, less often following the contour of the land. The precautions here are also suited to the cultivation: weeds or grasses grow along boundary lines or divide off sharp drops, or small stone fences may be used.

In Nagano, where there is no rice grown, there is little water from these sources. It [illegible]s from rainfall and amounts of sugar cane and sweet potato th[illegible] are grown depend on its quantity and regularity. Water regardless of crop is a constant problem. [312]

In Okinawan agriculture, constant fertilization is necessary. There are too many people to leave land fallow in ordinary times. Each plot must be used if the farmer has the time and energy to do so. Since the island is in a humid subtropical climate, the organic materials in the soil (humus) are quickly oxidized. Porous soils encourage the leaching of minerals from the top soil, especially with torrential rains. The fewness of domestic animals increases the dependence on plant residues and artificial fertilizers. One of the commonest complaints of the Okinawan farmer, in addition to the poorness of his soil and crop damage from typhoons, is that it must be unceasingly fertilized. It is a treadmill. He must walk fast to stay in the same place. [134] [231]

There is very little difference in the use of fertilizers in the communities studied. Fertilizers most frequently used are:

(1) Composts. A typical mixture (though there are many combinations) may be composed of dried miscanthus, or any kind of grass, ashes and cinders, perhaps some pieces of charcoal, and goat droppings. This is left a month outside in a pile and put on the fields and hoed under.

(2) Plant residues. These are put on the soil, both of paddy and dry crop land, and hoed under. Plants are the greatest single source of fertilizer. The cut over rice plant is turned under in the paddy field. Tops of the sweet potato, if not used as slips or for food for animals, miscanthus grass, and burned rice hulls are other sources of fertilizer. [824]

(3) Animal manures mixed usually with pen grass. Animal fertilizers are not abundant, an indirect effect of the war which greatly reduced the number of horses, cattle, pigs, goats, and the smaller domestic animals. When available, goat, pig, or horse manures are used. Pig or goat pen grass is gathered up and spread on the fields. Pig manure is the best source of animal fertilizer, for pigs are the most numerous of the larger domestic animals. [727] [232] [231]

(4) Night soil. The use of night soil, called jinpun in Okinawan, has declined from pre-war times. It is often said that it is not used at all. But this statement must be qualified. It is [514]

313 Home Industries and Famous Products The forested northern mountains give rise to small scale lumbering, charcoal making,
314 and firewood gathering. Kunigami-son and Kushi-son emphasize the gathering of
433 bamboo and firewood. On the other hand the making of charcoal is more important in Nago, Haneji, and Ōgimi. The urbanization of the south combined with
[369] [491] the postwar extension of roads into formerly inaccessible parts of the north have accelerated exploitation of the northern forest resource. Particularly heavy is the demand for long roof poles, or kichigwā, after every major typhoon.
[237] Kunigami-son and Higashi supply the bulk of these. Where wood is plentiful behind a coastal road, one often finds lime kilns, which process the coral of the reefs.

258 The sea is also a major source of material for home industries. Sea
433 salt is made at Yagaji, Urasoe and Oroku on the west coast, at Henza and Awase
[237] on the east. Kunigami-son prides itself upon its production of seaweed. Buttons from seashells are made in Mawashi. Fish cakes ('kamaboko') are made in quantity in Itoman and Naha, with lesser amounts being produced in Ishikawa and Nago. Dried bonito ('katsuoboshi') is a specialty of Tonaki isle to the west. Motobu-chō holds second place, followed by the western isles of Tokashiki and
505 Zamami. For over a hundred years the small cargo sailboats ('Yambaru-sen')
178 of the east coast have carried forest products from the north. The extension of roads into the northern forests has greatly reduced the amount now carried by sea.

433 Horse breeding is a specialty in Nakazato (the eastern half of Kume-
[232] shima), which has 22% of the gunto's production of horses. However, the pro-
[233] duction of horse and cattle hides is concentrated in the urban areas, which
[231] account for 84% of the hides produced. Nakazato is also famous for production of silk cocoons, being responsible for about two-fifths (38.7%) of the gunto's total. The leading mainland producer is Motobu-chō, with 9%.

Although Okinawa is not self-sufficient in tea, the three areas of
[245] Gushikawa, Ishikawa and Kunigami produce over half of the local tea. In Oku
[474] village of Kunigami, the tea factory is a cooperative venture. Gushikawa
[375] and Chatan pride themselves upon possessing 'sake' and 'awamori' distilleries.
[246] Mawashi is the center of production of farm tools, and accounts for some weaving of banana cloth. Weaving of mats from the "seven isles reed" ('shichitō-i') is a local specialty of Kanegusuku.

[314] Travertine quarries are found in Motobu-chō and Katsuren. A sandy limestone is quarried at Minatogawa in Gushichan.

The leaves of the yūna tree are a native
311 substitute for toilet paper, and are still used in some villages, though people
824 deny that the practice continues. When pressed they may intimate that so-and-
[514] so, "the poor family over the hill", retains the practice. Banyan trees fur-
[178] nish leaves for green manure, as do many other varieties. Before the war many
people grew kuroki for eventual use in the making of samisens. The top of the
[524] tree was cut when young so that it would become stubby and thick. The neigh-
[293] boring village of Tsukazan boasts of a samisen-maker whose fame has taken him to Naha. The 'kusunoki' tree is considered to be the best tree to plant near the house, for it discourages termites.

241 Fertilizers Okinawan farmers in most areas utilize the traditional night soil and green manures, as well as the modern synthetic fertilizers.
[514] Almost every house has two toilets. The one not in use is utilized as a
night-soil decay pit. Pig manure is mixed with the human excreta, water added,
● [237] and the whole let set for about a fortnight before use on the fields. Use of animal manure in the paddies was abandoned with the introduction of the new variety of rice. Animal manure produced good heads on the old variety but makes heavy stalks only on the new.

241 Green manure is extensively used as a plant nutrient in the paddy
824 fields. Indeed, some paddies in winter are devoted to the raising of green manure, which is plowed under before spring planting. Outer leaves of cabbage are fed to goats to become manure for the dry fields, or the leaves are trampled into the mud of the paddy to decay. Thistles, 'kuwazu-imo' leaves, and tree leaves of the yūna and banyan are only a few of the many types of green manure. Compost, or 'taihi', is made for the dry fields and some paddies by mixing animal manure with 'genya' grasses, rice straw, and other plant remains. Before the war, compost was not used for vegetables, because it would cause a shortage in the amount available for the cane fields. Nowadays compost is more available, and many vegetables assume huge proportions. One Nanahan farmer produced a wax melon weighting 97 'kin', or 128 pounds.

241 Commercial fertilizers available to the farmers include ammonium sulphate ('ryusan ammoniya', 'ryūan'), synthesized fertilizer ('kasei hiryo'), ammonium nitrate ('ryusan kari'), nitrogen-lime ('sekkai chisso'), urea ('nyōso'), potassium chloride ('enkakari'), and superphosphate of lime ('Karinsan sekkai'). Ammonium sulphate is preferred for sugar cane. During the last four or five years the Agricultural Federation ('Nōren') in Naha has enforced a tie-in sale so that when a farmer buys two sacks of ammonium sulphate, he must also buy one sack of superphosphate of lime. Farmers in Tomoyose quite often dispose of the latter by dumping it beside the road, as they believe that it is not good for the soil found on their farms. One enterprising Nanahan farmer, who for several years was a member of the Kochinda-son agricultural committee, enquires about the cast-off fertilizer, and when he finds it he uses it to good effect. When he was interviewed concerning this, he expressed anger at what he considered the backwardness of his neighbors.

[177] Okinawans were first introduced to chemical fertilizer in the mid-twenties, when a black fertilizer appeared. This was later replaced by the various white products, which since some time before the war have been supplemented by soybean waste when available.